



VIDEO

FAQ

Q How do digital TV broadcasts work, and what do you mean when you mention multiplexes?

A Digital television in the UK uses the Digital Video Broadcasting (DVB) standard. Most common is DVB-T. The T stands for terrestrial, which is more commonly known as Freeview. Other variants include DVB-S and DVB-C, for satellite and cable subscribers. Again, these are usually known by brand names such as Sky. All the variants use MPEG2 video compression to reduce the amount of data bandwidth required. This means many more channels can be broadcast without taking up too much space on our already overburdened airwaves. In fact, our airwaves are so full that HD TV broadcasts will probably be delayed until the analogue turn-off frees up much-needed space.

There are lots of other kinds of data broadcast as well as MPEG2 video data – audio for TV and radio stations, EPG information, Teletext and interactive services to name a few. All this data is bundled up into groups called multiplexes. A multiplex is a physical broadcast that contains a number of channels or services. A simple example is Multiplex 1, which carries six of the main BBC channels, including BBC1, BBC2 and BBC News24. A more complex example is Multiplex B, which carries CBeebies and BBC4, but also carries seven radio stations at varying times of the day, and three channels that work together to provide interactive video services such as Test the Nation quizzes or the match selection at the Wimbledon tennis tournament.

Multiplexes are the physical transmissions, but our set-top boxes disguise this from us by simply presenting all the channels together regardless of the multiplex from which they came. This explains why you may get equally bad reception on certain groups of channels. Some multiplexes have more channels on them than others. This can mean the available bandwidth for each channel is reduced and image quality can suffer because the video stream is more highly compressed. Compression is bound to become a greater issue as more TV channels and eventually HD TV channels are squeezed on to our airwaves.

seth@computershopper.co.uk



▲ Look for the DVB logo on equipment capable of receiving UK digital TV

REVIEW MEDIA PLAYER

D-LINK DSM-320RD

RATING ★★★★★

PRICE £195 inc VAT

SUPPLIER www.wlanplanet.co.uk

DETAILS www.acer.co.uk



There are quite a few media players on the market, all designed to stream media files from your PC so you can enjoy them on your TV, and D-Link's DSM-320RD is the latest. But while in many ways this is an improvement over previous products, it omits some common features.

The first thing we noticed was the Windows Media Plays For Sure Audio logo on the box. This guarantees compatibility with DRM-protected audio content, such as tracks downloaded from online music sites. This is an essential feature for subscribers to such services, and it's good to see the logo on a media player at last.

D-Link has also taken advantage of Windows Connect Now. If you have Windows XP with SP2, you can use a simple wizard to copy your wireless network settings to a USB thumb drive. Plug the thumb drive into the USB port on the back of the DSM-320RD, and it configures itself automatically, making it the easiest media player to set up. The best thing is the WPA-PSK security. Previous media players have omitted this and used WEP instead, which is harder to set up and less secure.

If you want to stream protected audio content, you'll have to use Windows Media Connect on your PC. The device is compatible with other UPnP server software such as TwonkyVision if you prefer. File format support is good for all popular audio and image formats. Video support includes Xvid, but not Microsoft's WMV format.

The DSM-320RD contains a DVD player and is shaped like one too. A memory card reader supports

all the common formats except xD. The rear has all the connectors you're likely to need. Unfortunately, a dedicated component output has been sacrificed to fit a SCART connector on this European model. You can still use a component output with progressive scan by buying a SCART-to-component adaptor. Disappointingly, there is no support for HD output.

Image quality through RGB SCART was satisfactory. We streamed some video files and watched DVDs with no issues. The interface is boring, consisting of a series of text options. It doesn't even support thumbnails in the photo section. The remote is great, though, being ergonomic and clearly labelled.

The DSM-320RD has a lot going for it, thanks to the implementation of the latest Windows features. If you need to stream Plays For Sure media into your living room, this is a useful device. But it is expensive, and the lack of HD support is limiting.

Seth Barton

✓ Plays for Sure-compatible

✗ Expensive; no high-definition support

SPECIFICATIONS Requires a PC with a 500MHz processor, 128MB RAM and Windows XP. SCART, S-video, composite, stereo phono, coaxial S/PDIF and optical S/PDIF outputs, USB, 100Mbit/s network, 802.11g wireless. **Part code** DSM-320RD

HOTLIST TV TUNER

TERRATEC Cinergy Hybrid T USB XS

RATING ★★★★★

PRICE £78 inc VAT

SUPPLIER www.savastore.com

DETAILS www.terratec.net

This USB stick is a hybrid device that can receive analogue and digital broadcasts.

Terratec bundles the excellent PowerCinema 4 software. This gives you a Sky+ style full-screen EPG, as well as media file and DVD playback. The remote is well designed and the buttons are clearly labelled.

It has all the features you could ever want. Picture quality is great and the software is the best we've seen. This is easily the best of its kind.

SPECIFICATIONS Terratec RF, line-in, composite and S-video inputs, MPEG2 capture format, USB Hi-Speed interface. **Part code** E3318



HOTLIST HARD DISK CAMERA

JVC GZ-MG20

RATING ★★★★★

PRICE £388 inc VAT

SUPPLIER www.novatech.co.uk,

08701 120612

DETAILS www.jvc.co.uk

The GZ-MG20 has a built-in 20GB hard disk, which will store a massive nine hours of video on its normal quality setting. You can browse thumbnails on the LCD screen for instant playback, and transfer video to your computer by simply dragging and dropping files. The rest of the device feels like a standard MiniDV camcorder. It's ideal for the occasional camcorder user.

SPECIFICATIONS Hard disk camcorder, 20GB storage, 1/4" CCD, 25x optical zoom, USB Hi-Speed interface. **Part code** GZ-MG20U



REVIEW TV TUNER**HAUPPAUGE
WinTV-HVR-900**

RATING ★

PRICE £59 inc VAT

SUPPLIER www.savastore.co.uk, 08716 661616DETAILS www.hauppage.co.uk

Some of the benefits of digital TV, such as dedicated quiz channels, are arguable. One definite advantage is the Electronic Programme Guide (EPG), which enables you to cancel your *Radio Times* subscription and say goodbye to fiddly VCR programming. So it came as a shock to discover that Hauppauge's WinTV-HVR-900 doesn't support any kind of EPG. This is inexcusable for a new hybrid USB tuner. We suspect the fault lies not with the hardware but with Hauppauge's ageing WinTV2000 software.

This application wasn't attractive when released, and it has not improved with age. The grey window and little buttons are more reminiscent of a computing tool than a home entertainment centre. You even have to launch a separate program to schedule your recordings manually. It makes you realise just how far we have come and how influential the Sky+ and TiVo EPG interfaces have proven.

The tuner is easy to set up, though: just plug it into a spare USB2 port and pop in the CD provided. Once the application is installed, it automatically runs the tuning tool and finds the expected channels. Analogue and digital channels are placed together on the same list, so it's easy to switch between them for the best reception.

To give the best chance of reception, Hauppauge has included a three-part aerial that is over a foot high. Whether you can get a decent picture will depend on reception in your area, though it's undoubtedly the best 'mini' aerial we've

tested. Picture quality from a roof-top aerial was good for analogue, which had a little noise but no ghosting, and digital, where only the usual MPEG2 compression artefacts could be seen.

The tuner is as grey and bland as the software, but it's big enough for a full-sized RF input, which is better than the fiddly converters on other USB stick tuners. There is no remote control included, which we thought was odd given that the device has an IR input on one side. There is also no breakout cable to allow the input of analogue video or audio signals.

The full-sized RF port and large antenna cannot make up for the mass of failings and omissions in this tuner. If you just want digital TV, buy Freecom's DVB-T USB stick for £43 including VAT. If you need a hybrid device, video inputs or comprehensive software then go for Terratec's Cinergy Hybrid T USB XS for £78 including VAT; see our Hotlist, below left, for more details. Until Hauppauge gets round to updating its geriatric software, it simply cannot succeed in this highly competitive and rapidly growing market.

Seth Barton

☒ Large portable antenna; full-sized RF input☐ No EPG; no remote control; no video inputs**SPECIFICATIONS** RF, IR, MPEG2 capture format, USB Hi-Speed interface. **Part code** 246**HOTLIST PORTABLE DVD PLAYER****MUSTEK
PL510**

RATING ★★★★★

PRICE £230 inc VAT

SUPPLIER www.meggydogcomputers.co.ukDETAILS www.mustek.com

With a large 10" screen, Mustek's PL510 portable DVD player is a joy to watch and it still fits comfortably in your lap. It supports Dolby Digital stereo, so listening to movies using headphones is an enjoyable experience.

Battery life is an acceptable two-and-a-half hours, which will let you watch all but the longest films. Unfortunately it lacks DivX playback for home video encoders.

SPECIFICATIONS 10" LCD, 2½ hours' playback, multi-region DVD, SD/MMC card reader. **Part code** PL510**HOTLIST STREAMING MEDIA PLAYER****PINNACLE
ShowCenter 200**

RATING ★★★★★

PRICE £162 inc VAT

SUPPLIER www.savastore.comDETAILS www.pinnaclesys.com

The ShowCenter 200 streams media files from your PC to your living room using Microsoft's Windows Media Connect software. It supports all the most common photo, audio and video file types and is easy to install. Its wired and wireless connections mean it will fit into any home network, too. Best media player on the market.

SPECIFICATIONS 1.5GHz PC required with Windows XP with SP1 and 256MB RAM; SCART, component, S-video, and composite video outputs, two stereo phono, optical and coaxial S/PDIF audio outputs, USB, 100Mbit/s network, wireless 802.11g**CHOOSING A...****TV CARD**

Five easy steps to choosing your perfect TV card

1 TV cards connect to PCs using one of four interfaces. Most fit into a PCI slot and some double as a graphics card so they use an AGP or PCI-E slot. External devices with USB interfaces are easier to install but need hardware compression or a digital tuner to avoid low-resolution video.



2 Most devices tune to analogue broadcasts from an aerial. Some receive digital TV broadcasts. These provide extra free channels but do not give access to subscription channels. Analogue broadcasts are technically superior to digital broadcasts, but digital tuners don't suffer from noise and ghosting when reception is poor – although they may cut out altogether.

3 Basic devices provide an RF input to connect an aerial. To connect a camcorder for video editing, look for a composite or S-video input. Digital tuners tend not to include this feature.

4 If you want to use your PC for video editing or as a digital video recorder, you'll need to capture video to disk in a usable compression format. The most practical format is MPEG2, which gives excellent quality and reasonable file sizes.

A 1GHz or faster PC can compress video to MPEG2 format in software, while slower machines need hardware compression on the card. Digital broadcasts are in MPEG2 format, making recording to disk easy.

5 Factor in extras such as an FM radio, a remote control and software for scheduled recordings and pausing live TV.

FILL IN YOUR SPECS HERE

(Recommended minimum in grey)

INTERFACE: PCI

TUNES TO: Analogue

INPUTS: Radio frequency (RF)

CAPTURE FORMAT: N/A

HARDWARE COMPRESSION: No

EXTRAS: